

REMARKS

Entry and consideration of the following amendments and remarks is respectfully requested.

Claims 1-19 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention. The Examiner's rejection is hereby traversed. The claims have been amended to overcome the rejections. Therefore, it is respectfully requested that the Examiner withdraw the 35 U.S.C. §112 rejection.

Claims 1-7, 11-17, and 10 were rejected under 35 U.S.C. §102(e) as being anticipated by Brinzer (U.S. Patent 6,031,453). Claims 6 and 16 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Brinzer and Itoh (EP 0716364). Claims 8 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brinzer and Uchida (EP 0626697). Claims 9 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brinzer and Takahara et al ("Takahara", U.S. Patent 5,412,400). These rejections are respectfully traversed.

The original claim 1 is amended and the subject matter of the original claim 9 is included therein. The original claim 10 is amended and the subject matter of the original claim 9 is included in it. New features concerning the provision of a "process graphic diagram" and a "graphic image" are introduced in these independent claims, which are based, for example, on the description passage on page 8, lines 4 to 10 of the substitute specification. Moreover, the original term "concrete

places” is replaced by the term “process elements” throughout the claims in order to clarify the matter for which protection is sought.

The subject matters of the new independent claims 1 and 9 are definitely novel in comparison to reference US 6,031,453. In detail, the feature that the provided graphic image is dimensionally changeable is not disclosed in reference to US 6,031,453. Additionally, this reference describes to use a display of a so-called control cabinet by means of which a modeling of a real field environment portion (i.e. the physical location) of the process element is not anticipated.

According to the subject matter of the new independent claims, the graphic image is adapted to show the location of the process element in the real field environment portion. This is achieved by providing a dimensionally changeable virtual three-dimensional image being used as the graphic image. Starting from reference US 6,031,453 as the closest prior art, the person skilled in the art gets no hint which would lead him in a direction making such a measure obvious to him. Furthermore, this is also not derivable by a combined consideration of reference US 6,031,453 with reference to US 5,412,400, as in the latter document exclusively the usage of a TV image is described..

Starting from document US 6, 031,453, a person skilled in the art knows a monitoring method and observation system by means of which components of an automation system are observable (see, for example, col. 2, lines 43 to 67, and col. 3, line 62, to col. 5, line 3). A process is presented as a graphic representation, i.e. as a process graphic diagram or a schematic. If a fault occurs, a fault message is immediately displayed in the graphic representation. The location of the fault can be seen by using a special function. In the described case, an image of a control cabinet is

displayed. According to reference US 6,031,453, the fault is identified in the graphic representations.

One problem in the system according to reference US 6,031,453 is that the physical (*i.e.* indicated real) location of the fault is not available for an operator. When a fault occurs, the operator has only location information in the schematic. In particular in more complex process systems, it is very difficult to physically find the defective part in the field (as also described on page 3, second paragraph, of the substitute specification.

Thus, a method for controlling a process as well as a corresponding process control system are desirable which provide the operator with improved location information in order to support the locating of a process part, for example, in the real process environment.

This is achieved by the measures defined in amended claims 1 and 9. In particular, by providing both a process graphic diagram, illustrating the process, for example, by known symbols each of which symbols representing such an element, and a dimensionally changeable virtual image, for example, a 3D virtual image which models the field environment of the element and shows the real position in the modeled real environment. When an element is selected, the virtual image can be changed freely in its alignment and magnification so that the real position thereof can be determined in relation to the other elements in the shown environment.

This subject matter is neither disclosed nor even suggested in reference US 6,031,453. Reference US 6,031,453 deals quite generally with fault diagnostics and is completely silent about any display of an image which is usable to identify the real position of an observed component in

the field, *i.e.* of its physical placement. The structure displayed on a monitor according to US 6,031,453 (see Fig. 5) is a schematic of the process. Even though reference 6,031,453 indicates that “*a closer look at the geographical ... location of a fault*” is possible (see col. 4, lines 1 to 5 in 6,031,453), reference 6,031,453 describes only the schematic of the control cabinet (see col. 4, lines 41 to 42). Any real environmental situation is not even mentioned so that a locating of an element in the real field is not simplified by reference 6,031,453. Thus, the claimed subject matter is not derivable for the person skilled in the art from this reference.

However, it is also not obvious from a combined consideration of reference 6,031,453 with any of the documents US 5,412,400, EP 626 697, or EP 716 364.

Reference US 5,412,400, which is also cited in the application documents, discloses the usage of a TV image for monitoring real objects in the process. However, as also described in the substitute specification of the present application on pages 3 and 4, such a provision of TV images and cameras does not solve the objective problem in a sufficient way. The installation of TV cameras is expensive, and only a limited number of cameras is available. Furthermore, the image taken by the camera can not “look behind” objects located in its path so that the locating capability of elements in the process is limited. However, reference US 5,412,400 does neither mention nor even suggest to use, for example a 3D virtual image.

Reference EP 626 697 describes a monitoring and diagnosing method and system in which also a process graphic diagram or a schematic of the process component is displayed (see, for example, Figs. 14 and 15 of EP 626 697. However, according to this reference, this display is used

to illustrate and evaluate effects of process setting changes. On the other hand, this reference does neither disclose or even suggest any measures or display types which are applicable to support or facilitate the locating of a process element in the real process field.

Reference EP 716 364 is deemed to be of less relevance for the claimed subject matter and describes a portable display device usable in an operator support system (see, for example, col. 16, lines 27 to 33 of EP 716 364.

Hence, since the cited references do not disclose the measures defined in the independent claims nor give any corresponding suggestion, the person skilled in the art could not be inspired by this prior art in such a way that the subject matter of the independent claims 1 and 10 could become obvious to him without requiring inventive activity. Hence, the subject matters of independent claims 1 and 10, and their dependent claims are not obviated or anticipated by the cited prior art.

Therefore, it is respectfully submitted that the claimed invention distinguishes over the prior art and defines patentable subject matter.

In view of the amendments to the claims made herein and the arguments presented above it is submitted that the Examiner's objections have been overcome and should be withdrawn.

It is believed that the submission of this Amendment is timely. In the event that any extensions and/or fees are required for the entry of this Amendment, the Commissioner is specifically authorized to charge such fee to Deposit Account No. 50-0518 in the name of Steinberg & Raskin, P.C.

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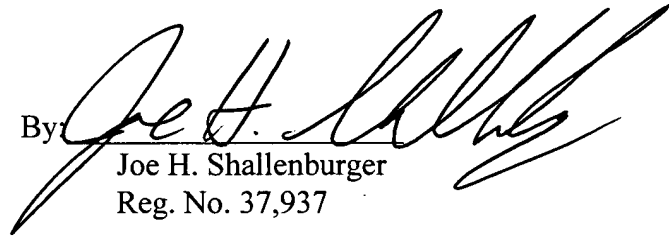
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Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,
STEINBERG & RASKIN, P.C.

By



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